

**PROGRESS REPORT OF
WOLF POPULATION MONITORING
IN WISCONSIN
FOR THE PERIOD
APRIL - SEPTEMBER 2002**

By: Adrian P. Wydeven, Jane E. Wiedenhoeft,
Ronald N. Schultz, Richard P. Thiel and Wayne H. Hall

Wisconsin Department of Natural Resources
Park Falls, Wisconsin

January 2003

ABSTRACT

Forty-six wolves (including 2 recaptures) were caught in spring and summer 2002, and 44 were fitted with radio transmitters in Wisconsin. At least 83 packs occurred in Wisconsin at the start of the period. A total of 71 collared wolves were monitored by the Wisconsin DNR during the period. Seven of these wolves died, 4 went off the air, and 2 moved to Michigan. Howl surveys were conducted in 34 of the 83 packs in the state, and pups were detected in 24 packs. Reports of wolf observations were received from 29 different counties during spring and summer. Seventeen wolves were trapped from 3 different depredation sites, and 16 were translocated 32 to 109 miles away. Eight hunting dogs were killed by wolves.

INTRODUCTION

Wolves returned to Wisconsin in the mid 1970's after being extirpated for 15 years (Wydeven et al. 1995). The Wisconsin Department of Natural Resources (DNR) has monitored the wolf population annually since 1979, and population monitoring efforts were reinforced in the 1989 recovery plan (Wisconsin DNR 1989), and the 1999 wolf management plan (Wisconsin DNR 1999). Monitoring in spring and summer consisted of live trapping, radio collaring, radio tracking and howl surveys. Winter monitoring included snow tracking of wolves, radio tracking of collared wolves, and estimation of the state wolf population (Wisconsin DNR 1999). Surveys from winter 2001-2002 indicated a state population of 323-339 wolves in 81 packs and 8-9 loners (Wydeven et al. 2002). The 1999 wolf plan set a state delisting goal of 250 wolves outside of Indian reservations (Wisconsin DNR 1999). Last winter 309-325 wolves occurred outside of Indian reservations, and thus the state delisting process should begin soon. Wolves in Wisconsin have increased at the rate of 20% annually since 1985. The late winter count is the period used for assessing the wolf population in relation to goals. The current report covers monitoring activity from April through September 2002.

ACKNOWLEDGEMENT

Many people have assisted with wolf population monitoring. DNR pilots who tracked radio collared wolves included Mike Weinfurter, Paul Anderson, John Bronson, Joe Sprenger, Phil Miller and Dan Cardinal. Dick Thiel coordinated wolf surveys in central Wisconsin. Wayne Hall studied wolves with graduate student Ellen Heilhecker of University of Wisconsin - Stevens Point under Dr. Eric Anderson.

Jane Wiedenhoeft coordinated data entry and summarized survey information. Kerry Beheler and Dr. Julie Langenberg coordinated health monitoring of wolves. Ron Schultz, Adrian Wydeven, Buck Follis and Todd Naas conducted wolf trapping and howl surveys in northern Wisconsin with help from Greg Kessler, Chris Schultz (University of Wisconsin-Superior intern), Tara Hewitt (Environment Australia), Bruce Bacon, Randy Jurewicz, Rich Wissink, Ken Jonas, Linda Winn, Sherrie Buller, John Rafferty (University of Illinois, Champaign), and Rich King (Necedah NWR). USDA- Wildlife Service persons were involved in investigating wolf depredation, providing advice to owners of domestic animals and trapping problem wolves under the direction of Bob Willging (northern Wisconsin) and Scott Beckerman (southern and central Wisconsin), and included Barry Benson, Phil Peterson, Jim Rollman, Ed Zydzik, Eric Fromm, Kelly Thiel, Buck Follis, Jeremy Irish, Jim Miller, Mike Haen and Dewayne Snobl. Wolves found dead in the field were examined at the National Wildlife Health Center by Dr. Nancy Thomas and Dr. Carol Meteyer, coordinated through Dr. Grace McLaughlin. Other volunteers involved in wolf surveys in spring and summer 2002 included: Jayne Pagnucco, Sean Pagnucco, Robert Nelson, Gary Peterson, Cindy Mueller, Bea Weyers, Rachel Tilseth, Jeff Chastan, Nancy Warren, Pam Troxell (TWA), Chris Giese, Norm Poulton, and others. Adrian Treves (University of Wisconsin), John Shivik (USDA-WS) and student Kerry Martin conducted research on techniques of excluding wolves from certain sites. Wolf population monitoring funds were provided by U.S. Fish and Wildlife Services, Endangered Species grants; Federal Aid in Wildlife Restoration; Project W-154R (PR funds); Chequamegon-Nicolet National Forests; Wisconsin Endangered Resources Check Off and License Plate Funds; Timber Wolf Alliance (TWA) Adopt-A-Wolf Program, and Timber Wolf Information Network. Radio collars were purchased/donated by Marshall Middle School (2), Chelsea Nehm, North Lakeland Elementary School, St. Mary School (Janesville), and David Mech. Other moneys were donated to the wolf program.

METHODS

Wolves were live trapped and radio collared following procedures of Mech (1974) and Wydeven et al (1995). Trapping for monitoring was done from early May through early August. Additionally, wolves trapped by USDA-Wildlife Services at depredations were fitted with radio collars and translocated across northern Wisconsin; depredation trapping was conducted from mid May to the end of September. Only wolves weighing more than 30 pounds were fitted with radio collars. Radio collared wolves were generally located once per week from the air by DNR pilots with fixed wing airplanes, but dispersers and translocated wolves were sometimes located two or three times per week.

A study was conducted by Ellen Heilhecker, Eric Anderson and Wayne Hall on mortality affecting pups in central Wisconsin by placing ear tag radio transmitters on pups in July and August. The pups were located daily to assess movements and factors causing pup mortalities. The detailed results of this study will be reported elsewhere.

A satellite collar was monitored on a wolf in the central forest (311F) and the collar went off the air early in the monitoring period. Such collars provide more frequent locations, but have shorter battery length and produce less precise locations than conventional VHF collars (Ballard et al. 1995).

Home range area for the summer period (15 April-14 September) was determined with the minimum convex polygon (Mohr 1947). Isolated radio locations over 5 km from other points were considered extraterritorial moves as done by Fuller (1989). When 2 separate clusters of radio locations existed with regular travel between them, then areas in between were considered part of the home range regardless of distance, as long as both clusters did not occur in another pack territory. Home range areas were calculated only for wolves that occupied stable areas, and did not include wolves that were dispersing.

Howl surveys (Harrington and Mech 1982) were used to determine pup production, location of rendezvous sites, summer location of non-collared packs, and to determine the presence of new packs. Howl surveys are useful for determining occurrence of wolves and presence of pups, but not reliable for accurate counts of wolves beyond 2-3+ adults or 2-3+ pups (Harrington and Mech 1982).

RESULTS AND DISCUSSION

A total of 46 wolves were live captured in spring and summer, and 44 were radio collared or fitted with ear transmitters (Table 1). Wolf captures included 29 wolves caught for normal monitoring (18 collared and 10 pups fitted with ear tag transmitters), and 17 wolves captured by USDA-Wildlife Services in depredation control actions (one male pup died in captivity and 16 other wolves were translocated across the state). Captured wolves included eight adult males (averaged 79.3 lbs of 7), one yearling male (81 lbs.), nine pup males (range 15 to 46 lbs.), twelve adult females (averaged 71.5 lbs.), eight yearling females (averaged 57.0 lbs.) and 8 pup females (range 15 to 42 lbs.). A total of 931 trap nights were used to capture 12 wolves in northern Wisconsin (11 collared) and 509 trap nights were used to capture and radio collar 17 wolves in central Wisconsin (10 pups).

Figure 1 illustrates the 81 wolf packs detected in Wisconsin in late winter 2002. Figure 1 did not include the Deerbrook Pack (adult pair and pups born in spring 2002) and the Rib River Pack (pair?). Both of these groups were detected when depredation problems occurred in spring and summer. Both had probably recently occupied their home range areas. Control trapping in 2002 translocated all the Deerbrook Pack, and the alpha male of the Rib River Pack. Control trapping probably also caused translocation of most, and perhaps all, members of the Totagatic River Pack, Riverside Pack, and perhaps any remaining members of the Chase Brook pack. Translocated wolves were released in Bayfield, Price, Vilas and Menominee Counties. The Menominee wolves moved into adjacent Oconto County. Wolves released in Price and Vilas Counties spread out across northern Wisconsin and western upper Michigan. The single wolf released in Bayfield County died within less than one week.

During the spring and summer 2002, a total of 71 radio tagged wolves were monitored by the WDNR (Table 2). This is the highest number of radio tagged wolves monitored by the WDNR during the spring/summer study period. Major increases in radio tagged wolves included trapping of 17 problem wolves by USDA-Wildlife Services, and trapping of 10 pups in central Wisconsin for a pup survival study. Wolves were monitored in 38 or more Wisconsin wolf packs, one Minnesota pack and one wolf living as a loner (translocated in 2001). Seven wolves died during the period (292M, 295F, 296M, 430M, 349F, 401M and 404M); four wolves went off the air (298M, 311F, 402M, 405M); and 2 moved into Michigan after being translocated (436F, 455F). Thus 58 wolves were on the air in early fall, including 42 wolves in northern Wisconsin, and 16 wolves in central Wisconsin (including 5 pups with ear tag transmitters). Wolves monitored during spring and summer 2002 included 21 adult males, 25 adult females, 1 yearling male, 9 yearling females, 7 pup males and 8 pup females.

Mean home range areas in summer for wolves in northern Wisconsin appeared to be larger than in the central forest (33 square miles vs 24 square miles; Table 3). Average home range for adults with 20+ radio locations was 31 square miles. The largest home range area was for adult female 241F who occupied a 90 square mile home range, but probably left her original territory and may have been establishing a new home range.

Wolf Pack and Lone Wolf Summaries

Listed below are summaries of spring and summer surveys of Wisconsin packs and individual wolves across the state (nicknames used in the field are listed in the appendix). Approximate locations of pack areas are shown in Figure 1.

Northern Forest Packs

Atkins Lake Pack - Oneida & Forest Counties: Three wolves last winter; no surveys this period, but several observations. No collared wolves in this pack.

Augustine Lake Pack - Ashland & Iron Counties: Seven wolves last winter, no surveys this period. No collared wolves.

Averill Creek Pack - Lincoln County: Five wolves last winter. Adult male 433M caught 5 June 2002, but possibly a hybrid (very long ears - 15 cm); two howl surveys and 2 pups detected; one pup was found dead along a roadway.

Bird Sanctuary Pack - Douglas County: Three to five wolves last winter; adult female 447F caught 21 June 2002; three howl surveys and 3 pups detected.

Black Lake Pack - Ashland & Sawyer Counties: Five wolves last winter; adult female 370F occupied 31 square mile (19 locations) summer home range; two howl surveys and no pups detected.

Blue Hills Pack - Barron and Rusk Counties: Two wolves last winter; female pup 779F caught on 13 June 2002, but too small to collar; no howl surveys, but at least 1 pup detected.

Bootjack Lake Pack - Oneida & Price Counties: Ten or eleven wolves last winter; adult male 336M occupied 55 square mile area (22 locations); no howl surveys, but pup production suspected.

Casey Creek Pack - Douglas County: Four wolves last winter; adult female 446F caught 13 June 2002; no howl surveys conducted.

Chain Lake Pack - Douglas & Washburn Counties: Six wolves last winter; adult male 291M occupied 37 square mile area (22 locations); no howl surveys conducted, but pup production suspected.

Chase Brook Pack - Burnett & Douglas Counties: Three wolves last winter; no collared wolves during the period; depredation control trapping may have removed any remaining pack members; no wolves heard in 2 surveys with 34 stops in late summer.

Chippewa River Pack - Ashland & Iron Counties: Eight wolves last winter; adult male 351M occupied 46 square mile area (22 locations); no howl surveys, but pup production suspected.

Crex Meadow Pack - Burnett & Pine (MN) Counties: Seven wolves detected last winter; adult male 388M occupied 48 square mile area (22 locations); no howl surveys, but pup production suspected.

Crotte Creek Pack - Douglas County: Four wolves detected last winter; adult male 296M found shot to death on 20 May 2002; no howl surveys conducted, but pup production suspected.

Davis Lake Pack - Price County: Eight wolves detected last winter; no surveys this period.

Deerbrook Pack - Langlade County: Not detected last winter, but reports of wolves received nearby. Two adults (453M & 454F) and 6 pups (untagged male, 435F, 443F, 449M, 450F and 452F) were captured from the area after depredation on two dairy cows. Two adults and five pups were translocated to the Menominee Indian Reservation after being held in captivity for about one month. The pack roamed areas of western Oconto County near the Oconto River at the end of the period.

Dunbar Pack - Marinette & Florence Counties: Two wolves detected last winter; no collared wolves, but lactating female photographed in spring; three pups observed 1 July 2002.

Eastside Firelane Pack - Ashland County: Three to four wolves detected last winter; no collared wolves; no howl surveys.

Eddy Creek Pack - Sawyer County: Five wolves detected last winter; no collared wolves; no surveys in spring and summer.

Escanaba Lake Pack - Vilas County: Three wolves detected last winter; no collared wolves; no wolves heard in howl survey in late September.

Flag River Pack - Bayfield County: Two wolves detected last winter; adult male 438M caught on 21 May, and adult female 439F caught on 22 May 2002; both occupied areas of about 21+ square miles (15 locations); pup production suspected; this pack began depredations on sheep in late summer and early fall near Port Wing and killed 7+ sheep.

Ghost Lake/Porcupine Lake area Pack - Bayfield County: Three wolves detected last winter in Ghost Lake Pack, but 241F adult female of this pack shifted her home range to north around Porcupine Lake area, 90 square miles, and may have dispersed from Ghost Lake territory.

Giant Pine Pack - Forest County: Two wolves detected last winter; no collared wolves; one pup detected in howl survey.

Harrison Hills - Lincoln County: Three wolves detected last winter; adult female 300F occupied a 13 square mile area (22 locations); 2-3 pups were detected with a single howl survey.

Haystack Corners Pack - Sawyer & Rusk Counties: Three wolves detected last winter; no collared wolves; no surveys this period.

Hellhole Creek Pack - Ashland & Bayfield Counties: Five wolves detected last winter; adult female 444F caught on 25 June 2002 and occupied 28 square miles (11 locations); 2 wolf pups seen on 20 June 2002, but none heard during howl survey.

Hoffman Lake Pack - Ashland, Iron & Price Counties: Five to six wolves detected last winter; no collared wolves; three or more pups heard during 2 howl surveys, but one pup was found dead along logging road later in summer, possibly from mange.

Hungry Run Pack - Ashland County: Eight wolves detected last winter; 16 trap nights were conducted in the pack in late June, but no wolves caught; no wolves heard during a single howl survey.

Ino Swamp Pack - Bayfield County: Three wolves detected last winter; no surveys this period, several observations reported in the area.

Kidrick Swamp Pack - Taylor County: Five wolves detected last winter; no surveys this period; the pack killed 4 dogs during the bear hunting season in September.

Little Rice River Pack - Oneida & Price Counties: Three wolves detected in this pack last winter; wolf 355M (adult male) occupied a 46 square mile area (22 locations); two or more pups detected in pack during two howl surveys.

Log Creek Pack - Price, Sawyer & Ashland Counties: Four wolves detected last winter; no collared wolves; no wolves heard on a single howl survey.

Moose Lake Pack - Douglas County: Five wolves detected last winter; adult male (434M) captured 29 May 2002; no howl surveys, but pup production suspected.

Moquah Pack - Bayfield County: Three to four wolves detected last winter; adult female (431F) caught on 1 June 2002; no howl surveys, but pup production suspected.

Moreland Lake Pack - Bayfield & Douglas Counties: Three wolves detected last winter; a total of 356 trap nights conducted in area, but several pull-outs occurred; no howl surveys conducted.

Morrison Creek Pack - Ashland & Iron Counties: Four wolves in this pack in the Bad River Reservation; no surveys conducted during the present period.

Murray's Landing Pack - Iron County: Four wolves in this pack last winter; 63 trap nights conducted in pack, but no captures; no pups heard on 2 howl surveys, but 2 or 3 pups observed in pack.

Nineweb Lake Pack - Vilas County: Three wolves in this pack last winter; no collared wolves; no pups heard on howl survey, but 3 pups observed in pack.

North Empire Pack - Douglas County: Three wolves in this pack last winter; no surveys this period; the pack may have been re-absorbed into the South Empire pack.

North Willow Pack - Oneida County: Five wolves last winter; adult female (437F) caught on 11 May 2002 and covered a home range of 27 square miles (19 locations); this wolf had an unusual appearance and may possibly be a wolf-dog hybrid, but remained in the North Willow area; 5 pups were detected in two howl surveys and 2 pups were observed.

O'Brien Lake Pack - Iron County: Three wolves in this pack last winter; a yearling female (448F) was caught in this pack on 20 May 2002 and occupied an area of 15 square miles on the south side of this pack; 2 or 3 pups were heard in howl surveys.

Oriente Falls Pack - Douglas & Bayfield Counties: Three wolves in pack last winter; no surveys this period.

Pelican Lake Pack - Oneida County: Four wolves detected last winter; adult female (332F) occupied a 9 square mile (18 locations) area; 2 pups detected in one howl survey.

Pine Lake Pack - Iron County: Five wolves detected last winter; no collared wolves in this pack; no pups heard during a howl survey.

Prairie River Pack - Langlade & Oneida Counties: Two wolves detected last winter of 2 collared wolves translocated from a farm in Burnett County in summer 2001; adult male 395M occupied a 37 square mile area (24 locations) but made 3 extra - territorial moves of 3.3 to 4 miles; adult female 724F occupied a 28 square mile area (24 locations); no howl surveys conducted, but pup production suspected because of den observed from the air in the spring.

Price Creek Pack - Price County: Three wolves detected last winter; no collared wolves; one howl survey was conducted and 2-3 wolves heard, but no pups.

Rainbow Lake Pack - Bayfield County: Ten wolves detected last winter; no collared wolves; no wolves heard during one howl survey.

Ranger Island Pack - Lincoln County: Five wolves detected last winter; adult female 285F occupied an 18 square mile area (22 locations) over summer; 2-3 wolf pups heard in howl survey.

Rib River Pack - Taylor County: No wolves detected last winter, but a pair with den detected in spring and injured dog at site; adult male 430M captured on 18 & 19 May 2002, initially moved 3 miles and moved 52 miles to the north the second time; died 36 miles to the north on 3 July 2002; no additional reports and not known if female was able to raise pups.

Riverside Pack - Burnett County: Two wolves detected last winter; no collared wolves in pack; members of this pack may have been removed with control trapping done on a beef ranch nearby. No wolves heard in 2 howl surveys in late summer.

Shanagolden Pack - Ashland County: Two wolves detected last winter; no collared wolves in pack; no howl surveys conducted.

Siskiwit Lake Pack - Bayfield County: Four wolves detected last winter; collared adult female 369F occupied a 24 square mile area (21 locations); 3-5 pups were observed by DNR and members of the public, but 3 pups were killed by vehicle collisions.

Skinner Creek Pack - Price & Sawyer Counties: Five or six wolves detected last winter; no surveys during the period; wolf 393F (yearling female) passed through the pack in May, at the time depredation occurred on 2 calves on south side of territory by either 393F or members of the Skinner Creek Pack.

Smoky Hill Pack - Bayfield County: Four wolves detected last winter; no surveys during the period.

Somo River Pack - Lincoln County: Five wolves detected last winter; no collared wolves; 3 or more pups heard on one howl survey.

South Empire Pack - Douglas County: Three wolves detected last winter; adult male 297M occupied a 33 square mile area (21 locations); no howl surveys, but pup production suspected.

Spirit Lake Pack - Price, Lincoln & Taylor Counties: Three wolves detected last winter; no collared wolves in pack; 2-4 pups heard on howl survey.

Stella Lake Pair (pack?) - Oneida County: Two wolves detected last winter; adult female 376F occupied a small 8 square mile area (22 locations); no howl surveys were conducted, but the cluster of radio locations indicated possible pup production.

Sterling Barrens Pack - Polk & Burnett Counties: Two wolves detected last winter; no collared wolves; no surveys during the current period.

Stuntz Brook Pack - Washburn County: Four wolves detected last winter; no surveys during the period, but wolves were observed several times along U.S. Highway 53, and 2 were killed on the highway by vehicle collisions.

Thornapple River Pack - Sawyer County: Two wolves detected last winter; no surveys during the period; no collared wolves in pack.

Torch River Pack - Ashland County: Five wolves detected last winter; adult male 248M occupied a 34 square mile area (21 locations); wolf 248M made at least one extra-territorial move into the Black Lake Pack to the southwest; 1 or 2 pups were heard at a howl survey after another pup had been killed on Highway 77 from a vehicle collision.

Totagatic River Pack - Burnett & Douglas Counties: Three wolves in this pack last winter; adult female 295F occupied an 11 square mile area (14 locations) before being trapped and translocated from a beef farm with depredation on 22 June; she apparently had produced pups, but the removal of all the pack members through control trapping may have caused the pups to die off.

Tranus Lake Pack - Washburn County: Seven wolves were detected in this pack last winter; adult male 292M was killed by other wolves in this pack on 29 May 2002; no other surveys were done in the pack, but pup production was suspected.

Tupper Creek Pack - Sawyer County: Two wolves were detected last winter; no collared wolves in pack, no surveys during the period.

West Firelane Pack - Ashland & Iron Counties: Four wolves were detected in this pack last winter; adult female M036F occupied a 5 square mile area (21 locations) in summer; no howl surveys were conducted, but pup production is suspected.

Wolf 393F/Long Lake Area - Rusk County: Female wolf 393F was translocated in summer 2001 from a beef farm in northern Burnett County to the Bootjack Lake Pack in northwest Oneida County when the wolf was a pup (\approx 4 months). She was released with 3 litter mates, but they all died in less than three weeks. Wolf 393F left the Bootjack Lake Pack in fall 2001, and spent the winter in central Price County east of Phillips and Park Falls. She was joined by another wolf in February 2002. In spring 2002, 393F began a southwest move. It was unclear if she still was accompanied by another wolf. In May, she passed through the Skinner Creek Pack at a time 2 calves were killed. It was unclear if 393F caused the depredation or members of the Skinner Creek pack. Depredation ended after 393F left the area. By 12 July 2002, 393F settled into a wild area southwest of Ladysmith, east of the Flambeau River. She remained in the area of about 6 square miles for the remainder of the period; it was unclear if she was still with another wolf. No wolves responded to howl surveys in the area. The Long Lake area settled by 393F was 66 miles southwest of her release site and 74 miles southeast of the depredation site in Burnett County from where she was removed.

Central Forest Packs

Bear Bluff Pack - Jackson & Wood Counties: Five or six wolves detected in this pack last winter; two collared wolves occurred in the pack in 2001, including adult female 311F (satellite radio collar) and yearling male 338M (VHF collar); female 311F seemed to occupy an 11 square mile area (4 locations) before going off the air, and 338M occupied a 22 square mile area (21 locations); 6 wolves were captured in the pack in summer 2002 including recapture of 338M (now a 2 year old male), and yearling female 426F and 4 pups (405M, 406F, 407F, 408M); one or 2 more pups may have been in the pack..

Colburn Pack - Adams County: Three wolves detected last winter; no collared wolves, and no surveys conducted this period.

Dead Creek Pack - Jackson, Juneau & Monroe Counties: Three wolves detected last winter; no collared wolves; 1 pup heard in howl surveys.

Eau Claire River Pack - Clark & Eau Claire Counties: Two wolves detected last winter; no surveys this period.

Ft. McCoy Pair - Monroe County: Two wolves detected last winter; no wolves heard on howl surveys.

Iron Run Pack - Clark & Eau Claire Counties: Two wolves detected last winter; adult female 309F occupied 31 square mile area (21 locations) in summer; 4 or more pups were heard during howl surveys and 6 pups were captured on video by a local conservation warden; this was probably the first litter for wolf 309F; no wolves caught in 50 trap nights in pack.

Noch Hanai Pack - Jackson & Clark Counties: Two wolves detected last winter; no collared wolves in pack; no surveys this period.

Seneca Pair - Wood County: Two wolves detected last winter; adult female 391F occupied a 24 square mile area (21 locations) and adult male 343M occupied a 27 square mile area (21 locations); no wolves responded to howl surveys.

South Bluff Pack - Wood & Jackson Counties: Two wolves detected last winter; no collared wolves; no surveys this period.

Suk Cerney Pack - Juneau County: Two wolves detected in this pack last winter; adult male (442M), yearling female (427F) and 4 pups (349F, 401M, 402M, 404M) caught during summer; 5 or 6 pups had been seen in the pack by Necedah Refuge personnel; at least two pups died, one lost collar and a fourth lost its signal over summer; details of this pack will be reported by Ellen Heilhecker.

Two Korner Pack - Jackson & Clark Counties: Two or three wolves were detected in this pack last winter; no collared wolves; no surveys this period.

Wildcat Mound Pack - Jackson County: Four or five wolves in this pack last winter; one adult male (420M), two adult females (421F, 429F) and two pups (409M, 410F) were captured in this pack over spring and summer. 429F occupied at least 10 square mile area (15 locations); based on trapping efforts, at least 2 pups occurred in the pack.

Rattail Pack (formerly Yellow River) - Juneau County: Three wolves detected in this pack last winter; howl surveys indicated at least 3 pups in pack.

Dispersing and Translocated Wolves

Wolf 241F: This adult female had been in the Ghost Lake area since she joined this pack in winter of 1999. Last winter, she traveled 22 miles south of the Ghost Lake territory but returned within a few weeks. In summer 2002, her home range shifted to north and she roamed an area of about 90 square miles. The new home range was centered near Porcupine Lake and was about 10 miles north of the center of the Ghost Lake Pack territory last winter. It was not clear if wolf 241F had left the pack by herself, or if the pack home range area had shifted. Winter telemetry and snow track surveys may help determine the relationship of 241F to the Ghost Lake pack.

Wolf 250M: Wolf 250M, yearling male, disappeared from the Ghost Lake pack sometime after 30 January 2002 in Bayfield County and was found dead 37 miles to the west in Douglas County on 5 August 2002. The wolf had been dead for several months, but may have been dead since late winter or early spring.

Wolf M711M: Adult male dispersed from Baraga County, Michigan after 13 January 2002, and appeared in the Marinette area of Wisconsin in late March, but probably died prior to 9 April, and its collar was found near Peshtigo in Marinette County, 115 miles south of its original capture site.

Wolf M6606M: Adult male was caught near Ewen, Ontonagon County, Michigan on 23 September 2001 at a livestock depredation site and translocated about 40 miles to the northeast into Houghton County. It remained in the area until spring and then began dispersing southward, and was last detected in south Houghton County 40 miles from the release site on 7 May 2002. The wolf was illegally shot near Phlox, Langlade County, Wisconsin, 102 miles further southward on 27 August 2002.

Wolf 295F: The alpha female of the Totagatic River Pack was captured on 28 June 2002 at a beef farm in northern Burnett County after depredation on calves occurred on the farm. She was moved 59 miles eastward into eastern Bayfield County, but was found dead, probably from overheating on 2 July 2002, a short distance from the release site.

Wolf 393F: (Yearling female) as stated earlier, was translocated east into the Bootjack Lake Pack 116 miles from a beef ranch in northern Burnett County in summer 2001, as a pup. She spent the winter in a large home range west of the Bootjack Lake pack. In spring, she dispersed to southwest, and by 12 July 2002, 393F settled in the Long Lake area of Rusk County. Along the way, she may have been involved in livestock depredation in May. Her summer home range in the Long Lake area south of Ladysmith was 66 miles southwest of her release site, and 74 miles southeast of the depredation site in Burnett County.

Wolf 430M: (Adult male) was captured near the Rib River in eastern Taylor County, where he and his mate had seriously injured a dog. He was initially captured on 18 May 2002, and moved only 3 miles away, with the hope that capture and disturbance would cause him to move his mate and their den to a new location. But on 19 May 2002 he was again caught at this site and this

time was moved 52 miles to the north to northeastern Price County. From this site he gradually moved southward, but died in Price County sometime prior to 2 July 2002, and about 35 miles north of the release site.

Wolves 435F, 443F, 449M, 450F, 452F, 453M and 454F: Included an adult male (453M), adult female (454F), an uncollared male pup and 4 female and one male pup trapped from a dairy farm near Deerbrook, Langlade County from 17 July through 26 July 2002. The family group was held in captivity for about a month, and then were placed into holding pens on the Menominee Indian Reservation. Pups were released from the pens on 25 August and the adults were released on 2 September. The wolves remained near the release site for about a week, but by 12 September 2002, the adult pair had traveled 29 miles to the southeast, to Abrams in Oconto County. By 16 September 2002, the adults had returned north to join the pups just east of the reservation in Oconto County and 7 miles southeast of the release pen. By late September the pack had settled into a large swamp area along the Oconto River in western Oconto County, 11 miles southeast of the release pen.

Wolf 432F: (Yearling female) was captured on 25 July 2002 on a beef ranch in northern Burnett County where 295F had been captured earlier. She was probably a member of the Totagatic River, Chase Brook or Riverside Pack. She was translocated and released the same day 103 miles to the east into northeast Price County. From here she moved southward and by the end of September occurred in southwest Oneida and east Price Counties, west of the Little Rice River Pack, 16 miles south of the release site and 114 miles southeast of the original capture site in northern Burnett County.

Wolf 436F: (Yearling female) was caught on the beef ranch in northern Burnett County on 13 July 2002 and was released into southwest Vilas County, 109 miles to the east on 25 July 2002. By August, the wolf had moved into the western Upper Peninsula of Michigan, and WDNR discontinued monitoring on 30 September 2002 when the wolf was near Paulding, Ontonagon County, Michigan. The last location was about 51 miles northeast of her release site and 152 miles east of its original capture site in Burnett County.

Wolf 440F: (Yearling female) was captured in a small home range area in the Shoberg Lake area south of Lake Nebagamon. The home range area was somewhat north of the main Shoberg Lake area, and this wolf may be dispersing from that pack. Wolf 440F occupied a home range area of about 10 square miles (11 locations), but made one trip 8.5 miles to the east into Bayfield County on 26 August, but returned soon thereafter. It was not clear if other wolves occurred in this area.

Wolf 441F: (Yearling female) was caught on the beef farm in northern Burnett County on 3 July 2002, and was released 105 miles to the east into northeast Price County on 11 July 2002. The wolf may have originated from the Totagatic River Pack, or another pack in the area. The wolf moved southward into Price, northwest Lincoln and northwest Taylor Counties, and by the end of September was located near Mondeaux Flowage in Taylor County, 50 miles southeast of the original capture site.

Wolf 455F: (Adult female) was captured at the beef ranch in northern Burnett County on 18 July 2002, and was released into southwest Vilas County, 109 miles to the east, on 25 July 2002. From this site, the wolf headed northward and moved into the western Upper Peninsula of Michigan. The last location monitored by WDNR was west of Gogebic Lake in Ontonagon County, Michigan, 46 miles north of the release site, and 132 miles east of the original capture site. Wolves 455F and 436F were taken over by the Michigan DNR for monitoring efforts after September.

Wolf 456F: (Yearling female) was captured on the beef farm in northern Burnett County on 12 July 2002, and translocated 109 miles to the east into southwest Vilas County on 25 July 2002. Initially, the wolf moved north into southern Iron County, but later moved southward into eastern Price and southwest Oneida Counties, about 24 miles south. She moved to within 6 miles of the release site in northeast Price County by late September, but is not likely to stay in this area.

Wolf 457M: (Adult male) was caught on the beef farm in northern Burnett County on 10 September, and was released into Vilas County, 109 miles to the east on 7 October 2002.

Wolf 458F: (Yearling female) was caught on the beef ranch in northern Burnett County on 10 September and released into southwest Vilas County on 7 October 2002, 109 miles to the east.

Summary of Howl surveys

Statewide, over 47 howl surveys were conducted in 34 packs (Table 4). Forty to forty-five pups were heard in 16 of 34 packs, averaging 2.7 pups per successful pack. This is similar to the results from 2001 and 2000. Throughout the state, wolves were heard at 41 of 446 howl stops for a success rate of 9.2%. Thirty-

seven to forty pups were observed in 11 packs, or 3.5 pups per pack. A total of 68 to 76 pups were detected by both methods, but it appeared that at least 6 of the observed pups died during the summer.

Reported Wolf Observations

A total of 75 "probable" and "possible" wolf observations were reported for April-June 2002, and 84 observations for July-September 2002. This compares to 40 for the second quarter, and 93 for the third quarter in 2001. Rates increased in spring, but slightly declined in summer. Wolf observations were received for 29 counties, with highest reported rates for Vilas (22), Bayfield (19), Iron (15) and Ashland (14). Highest rates were generally for counties with the largest number of packs.

A new data source on wolf observations became available during this period. Rich Posig conducted a wolf call hotline for members of the Wisconsin Bear Hunters Association from late spring to early fall (Table 6). Observations were reported for 30 different counties. Observations were reported as one observation per site, or sites with two or more observations. Areas with two or more observations represent about half of the sites where wolves were detected, but are more likely to be pack areas. Counties with highest observation rates included Marinette (18), Forest (15), Oneida (13) and Price (13). The bear hunters seemed to have more reports in northeast Wisconsin, possibly due to more bear hunting and hound training in those areas.

Wolf Mortality and Health

Thirty wolves, including 10 radio collared wolves, were found dead during the period (Table 7). Two of the radio collared wolves were not actively being monitored at the time they were found dead (250M, M6606M). Some of the causes of mortality are preliminary because not all wolves had been necropsied. Overall mortalities included 12 vehicle collisions, 4 shootings, 1 capture related, 4 mange/starvation (all pups), 1 parvovirus (male pup), 1 unknown disease, 2 intraspecific strife, and 5 unknown mortalities. Among 8 actively monitored wolves, 2 were shot, 1 died of capture related activity, 1 was killed by other wolves, 2 died with mange and starvation, and 2 died from unknown causes. Vehicle collisions appear to be overly represented among all mortalities, but shootings were under represented, and based on collared wolves, may consist of 1/4 or more of the mortality.

Mange apparently continues to affect wolves, especially pups. Evidence of mange was found in 9 of 46 wolves trapped, including 4 slight and 5 moderate levels of mange. All wolves with moderate levels of mange were from the Suk Cerney Pack. Only 2 of 29 wolves handled from northern Wisconsin had evidence of mange and 7 of 17 wolves in central Wisconsin had some evidence of mange. Blood samples were collected from about 1/3 of the wolves live captured, but records on useful samples were not completed at the time of this report.

Wolf Depredation

Sixteen cases of wolf depredation on domestic animals occurred during the period April through September 2002 (Table 8). This compares to 14 depredation cases in 2001. The 2002 cases included 7 cases of depredation on livestock, 2 cases of depredation or harassment of game farm deer, and 6 cases of depredation on dogs. Livestock depredation included 5 farms where cattle were killed by wolves (31 calves, 2 cows), 1 farm with depredation on sheep (7 verified killed, 20 missing), and 1 farm with horses (colt killed immediately and mare euthanized a month later due to injuries received in attack). Wolves

killed 3 deer in one deer farm and harassed deer in a second deer farm. It appeared that 5 or 6 or more packs were involved in depredations on the 5 farms with attacks on livestock. In most cases, depredations seem to be by one pack per farm, but the beef farm in northern Burnett County may have received depredation from 2 or 3 packs because all 9 wolves removed were adults and yearlings, and included only 1 male.

Depredation occurred on 10 dogs, including one attack on a German Shepherd near a home in Taylor County, and 9 dogs attacked in bear hunting and training situations. Seventeen bear and bobcat hounds were killed by wolves in 2001. Three packs were involved with depredation on hunting hounds. Two packs had been involved in depredation on hounds in previous years, including the Shoberg Lake and Kidrick Swamp Packs. In September 2002, the Kidrick Swamp Pack attacked and killed 4 dogs in one incident. This is only the second time that a pack has been recorded killing more than two dogs in a single attack. During late summer, two depredations on dogs occurred in the Bootjack Lake area, the first time for this pack that has been around since 1980 or earlier.

Control trapping was conducted by USDA-Wildlife Services at 5 sites and 17 wolves were trapped from 3 locations. The alpha male from the Rib River Pack was trapped and translocated 52 miles northward on 19 May 2002. Eight wolves were trapped from a farm near Deerbrook, Langlade County, and were released into the Menominee Indian Reservation 32 miles to the southeast, after being held in captivity for a month. Eight wolves were removed from a beef farm in northern Burnett County and released 59 to 109 miles eastward. Wolves from this farm included an adult male (457M), 3 adult females (295F, 455F, 458F,) and 4 yearling females (441F, 456F, 436F, 432F); these wolves apparently represented members from 2 or 3 packs. At the end of the period, 14 of the translocated wolves were still alive.

Two wolves translocated from depredation sites in previous years may have been involved in depredations in spring/summer 2002. Wolf 393F translocated from a beef farm in Burnett County in 2001, was near a farm in western Price County at the time depredation occurred. This area was also the southern portion of the Skinner Creek Pack area, and 393F may have been attracted to kills from this pack. When 393F left the farm area, wolf depredations stopped.

Wolf 289F was translocated from a deer farm in 2000. Her collar stopped functioning about a year ago. At the time she occupied the Pioneer Creek area of northeast Vilas County. On 26 July 2002, a colt was killed and a mare injured by wolves in this area, and possibly wolf 289F was involved.

PLANS FOR NEXT STUDY PERIOD

Aerial telemetry will continue to be used to monitor collared wolves, with greater emphasis on trying to see and count wolves with snow on the ground. Aerial telemetry will also be used to monitor translocated wolves, and determine their final fate, or determine if they cause additional depredations. Snow track surveys will be conducted to determine distribution and abundance of non-collared wolf packs, or packs that are rarely observed from the air. Training and guidance will be provided for over 100 volunteers that will assist with winter surveys; this will be the 8th year of the Wisconsin volunteer tracking program.

LITERATURE CITED

- Ballard, W.B., D.J. Reed, S.G. Fancy and P.R. Kausman. 1995. Accuracy, precision, and performance of satellite telemetry for monitoring wolf movements. pp. 461-467 in L.N. Carbyn, S.H. Fritts and D.R. Seip (eds). Ecology and Conservation of Wolves in a Changing World. Canadian Circumpolar Inst. Occ. Publ. No. 35. 6428p.
- Fuller, T.K. 1989. Population dynamics of wolves in north central Minnesota. Wildlife Monographs. 105:41 pp.
- Harrington, F.H. and L.D. Mech 1982. An analysis of howling response parameters useful for wolfpack censusing. Journal of Wildlife Management. 46: 686-693.
- Mech, L.D. 1974. Current techniques in the study of elusive wilderness carnivores. Pages 315-322 in Proc XIth Int. Cong. Game Biol., Stockholm, Sweden.
- Mohr, C.O. 1947. Table of equivalent populations of North American small mammals. American Midland Naturalist. 37:223-249.
- U.S. Fish and Wildlife Service. 1992. Recovery plan for the Eastern Timber Wolf. Twin Cities Minn. 73 pp.
- Wisconsin DNR. 1989. Wisconsin Timber Wolf Recovery Plan, Wisconsin Department of Natural Resources, Endangered Resources Report 50. Madison, WI 37 pp.
- Wisconsin DNR. 1999. Wisconsin Wolf Management Plan. Wisconsin Department of Natural Resources, PUBL-ER-099 99. Madison, WI 74 pp.
- Wydeven, A.P., R.N. Schultz, and R. P. Thiel. 1995. Monitoring a recovering wolf population in Wisconsin. 1979-1991. pp 47-156 in L.N. Carbyn, S.H. Fritts and D.R. Seip (eds). Ecology and Conservation of Wolves in a Changing World. Canadian Circumpolar Inst. Occ. Publ. No. 35 542 pp.
- Wydeven, A.P., J.E. Wiedenhoef, R.N. Schultz, R.P. Thiel, S.R. Boles, and B.E. Kohn. 2002. Progress Report of Wolf Population Monitoring in Wisconsin for the Period October 2001-March 2002. Wisconsin DNR, Park Falls, WI (unpublished report) 41 pp.

Note: This report is a preliminary progress report and should not be construed as a finalized publication. Some of the numbers of pack size, composition, population figures, and other information may change as more data becomes available. Persons wishing to cite figures within the report should consult with the authors.